CLAIMS

1. A composition for detecting β -1,3-glucan exhibiting phenoloxidase activity by β -1,3-glucan in the presence of calcium ions, prepared by the method comprising:

collecting a sample comprising a mixture of plasma and hemocyte lysate from an insect,

treating said sample with a solvent or buffer solution containing a sufficient amount of a chelating agent to chelate calcium ions existing in said sample and during a separation process to obtain fractions therefrom; and

selecting fractions exhibiting phenoloxidase activity by β -1,3-glucan in the presence of calcium ions from the obtained fractions.

- 2. A composition for detecting β -1,3-glucan the minimum down to 20 pg/ml in the presence of calcium ions.
- 3. A method of preparing a phenoloxidase composition activated by β -1,3-glucan in the presence of calcium ions, comprising:

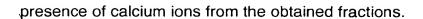
collecting a sample comprising a mixture of plasma and hemocyte lysate from an insect;

treating said sample with a solvent or buffer solution containing a sufficient amount of a chelating agent to chelate calcium ions existing in said sample and during a separation process to obtain fractions therefrom; and

selecting fractions exhibiting phenoloxidase activity by β -1,3-glucan in the

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4. The method according to Claim 3 wherein said insect belongs to Coleoptera.

5. The method according to Claim 4 wherein said Coleoptera belongs to Tenebrionidae or Scarabaeidae.

6. The method according to Claim 3 wherein said fractions are obtained by column chromatography.

7. The method according to Claim 6 wherein the column used for said column chromatography is packed with a resin comprising dextran or vinyl.

8. The method according to Claim 3, wherein whole or partially purified hemocyte lysate is further added to the fractions exhibiting the phenoloxidase activity by β -1,3-glucan in the presence of calcium ions.

9. A method of preparing a phenoloxidase composition activated by β -1,3-glucan in the presence of calcium ions, comprising:

treating insect plasma with a solvent of buffer solution containing a sufficient amount of a chelating agent to chelate calcium ions existing in said plasma and during a separation process to obtain fractions therefrom;

adding hemocyte lysate or partially purified hemocyte lysate to said fractions; and

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selecting fractions exhibiting phenoloxidase activity by β -1,3-glucan in the presence of calcium ions.

- 10. The method according to Claim 9 wherein said insect belongs to Coleoptera.
- 11. The method according to Claim 10 wherein said Coleoptera belongs to Tenebrionidae or Scarabaeidae.
- 12. The method according to Claim 9 wherein the said fractions are obtained by column chromatography.
 - 13. The method according to Claim 12 wherein the column used for said column chromatography is packed with a resin comprising dextran or vinyl.
- 14. The method according to Claim 9, wherein whole or partially purified hemocyte lysate is further added to the fractions exhibiting the phenoloxidase activity by β -1,3-glucan in the presence of calcium ions.
 - 15. A method of detecting β -1,3-glucan comprising the steps of:
- collecting a sample from a specimen;
 adding a composition of Claim 1 and calcium ions to said sample; and measuring the phenoloxidase activity in the sample.

16. A diagnostic kit for detecting β -1,3-glucan which contains the composition detecting β -1,3-glucan the minimum down to 20 pg/ml in the presence of calcium ions.

17 . A diagnostic kit for detecting β -1,3-glucan exhibiting phenoloxidase activity by β -1,3-glucan in the presence of calcium ions, prepared by the method comprising:

collecting a sample comprising a mixture of plasma and hemocyte lysate from an insect;

treating said sample with a solvent or buffer solution containing a sufficient amount of a chelating agent to chelate calcium ions existing in said sample and during a separation process to obtain fractions therefrom; and

selecting fractions exhibiting phenoloxidase activity by β -1, 3-glucan in the presence of calcium ions from the obtained fractions.

18. The diagnostic kit according to Claim 17 wherein said insect belongs to Coleoptera.

19. A diagnostic kit for detecting β -1,3-glucan exhibiting phenoloxidase activity by β -1,3-glucan in the presence of calcium ions, prepared by the method comprising:

treating insect plasma with a solvent or buffer solution containing a sufficient amount of a chelating agent to chelate calcium ions existing in the plasma and during a separation process to obtain fractions;

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adding hemocyte lysate or partially purified hemocyte lysate to the above optained fractions; and

selecting fractions exhibiting phenoloxidase activity by β -1, 3-glucan in the presence of calcium ions.

20. The diagnostic kit according to Claim 19 wherein the insect belongs to Coleoptera.

21. A composition for detecting β -1,3-glucan exhibiting phenoloxidase activity by β -1,3-glucan in the presence of calcium ions, prepared by the method comprising:

treating insect plasma with a solvent or buffer solution containing a sufficient amount of a chelating agent to chelate calcium ions existing in the plasma and during a separation process to obtain fractions therefrom;

adding hemocyte lysate or partially purified hemocyte lysate to said fractions; and

selecting fractions exhibiting phenoloxidase activity by β -1,3-glucan in the presence of calcium ions.

22 . A method of detecting β -1,3-glucan comprising the steps of:

collecting a sample from a specimen;

adding a composition of Claim ²¹ and calcium ions to said sample; and measuring the phenoloxidase activity in the sample.





- 23. The composition according to Claim 2 wherein said composition is characterized in measuring the phenoloxidase activity.
- 24. The diagnostic kit according to Claim 16 wherein said diagnostic kit is characterized in measuring the phenoloxidase activity.